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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/041,974  | 01/07/2002  | Jozeph Robert Marcin | 13137.0031          | 4254             |
| 7590  | 09/07/2004  |                      | EXAMINER            |                  |
| John R. Keville<br>HOWREY SIMON ARNOLD & WHITE LLP<br>750 Bering Drive<br>Houston, TX 77057 |             |                      | THOMPSON, KENNETH L |                  |
|   |             |                      | ART UNIT            | PAPER NUMBER     |
|   |             |                      | 3672                |                  |

DATE MAILED: 09/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                 |               |    |
|------------------------------|-----------------|---------------|----|
| <b>Office Action Summary</b> | Application No. | Applicant(s)  | 11 |
|                              | 10/041,974      | MARCIN ET AL. |    |
|                              | Examiner        | Art Unit      |    |
|                              | Kenn Thompson   | 3672          |    |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) Responsive to communication(s) filed on 24 May 2004.
- 2a) This action is FINAL.                            2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-5 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

|  |   |
|--|---|
| <ol style="list-style-type: none"> <li>1)<input type="checkbox"/> Notice of References Cited (PTO-892)</li> <li>2)<input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)</li> <li>3)<input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br/>       Paper No(s)/Mail Date _____.</li> </ol> | <ol style="list-style-type: none"> <li>4)<input type="checkbox"/> Interview Summary (PTO-413)<br/>       Paper No(s)/Mail Date. _____.</li> <li>5)<input type="checkbox"/> Notice of Informal Patent Application (PTO-152)</li> <li>6)<input type="checkbox"/> Other: _____.</li> </ol> |
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**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 4 and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Cochran et al., U.S. 3,180,419.

Regarding claim 1, Cochran et al. discloses in figures 1-4 a liner hanger. Cochran et al. discloses a casing mandrel (30) a cone assembly (12,15,17) journaled on the casing mandrel. Cochran et al. discloses a slot (10 at 25) on an outer wall of the casing mandrel. Cochran et al. discloses a groove (23), at least partially annular, on an inside surface of the cone assembly oriented with the slot. Cochran et al. discloses at least one wire (25) situated in the slot and the groove.

As to claim 2, Cochran et al. discloses are a plurality of slots (24,30a), and a plurality of grooves (23,12 at 34) oriented with the slots.

Regarding claim 4, Cochran et al. discloses at least one indent (10 at 25, 21) in the liner hanger body outer wall. Cochran et al. discloses at least one indent (23) in an inner surface of the cones (15,12); and a plurality of bearings (24,20) at least partially located in the indent in the liner hanger body outer wall (33) and at least partially in the indent in the inner surface of the cones (15,17,12) to resist axial movement of the cones relative to the liner hanger body.

Regarding claim 5, Cochran et al. discloses at least one indent (10 at 25, 21) in the liner hanger body outer wall (33). Cochran et al. discloses at least one indent (23) in an inner surface of

the cones (15,12). Cochran et al. discloses a wire (25) radially located in the indent in the liner hanger body outer wall and in the indent in the inner surface of the cones to resist axial movement of the cones relative to the liner hanger body.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cochran et al., U.S. 3,180,419 in view of Shallenberger et al., U.S. 4,855,100.

As to claim 3, Cochran et al. discloses the slot and groove. Cochran et al. does not disclose a single helical slot oriented with a single helical groove. Shallenberger teaches in figures 20-24 use of a single helical slot (98) oriented with a single helical groove (106) to allow for insertion of a coil (104) to provide a vibration and impact resistant connection (col. 8, line 64 – col. 9, line 5). It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the slot and groove disclosed by Cochran et al. to be a single helical slot oriented with a single helical groove, as taught by Shallenberger et al. to allow for insertion of a coil to provide a vibration and impact resistant connection which prevents inadvertent loosening.

### ***Response to Arguments***

Applicant's arguments filed 24 May 2004 have been fully considered but they are not persuasive.

Applicant argues that it is impossible for Cochran to anticipate the claims of the present invention, as Cochran is directed to a packer, while the claims of the present invention are directed to a liner hanger.

However the body of the claims do not contain specific limitations precluding the comparison. The elements in the prior art used to set or "hang" a packer are equivalent to all the claimed limitations.

Applicant argues the snap ring 25 disclosed by Cochran is not a wire, as snap ring 25 is allowed to travel within counter bore 23, and is not the attachment mechanism of the cones to the mandrel.

The snap ring is analogous to the claimed wire, and the counter bore 23 meets the definition of a groove, channel or furrow; the claim being absent of limitations precluding the comparison. The claims do not require the wire to be the attachment mechanism of the cones to the mandrel.

Applicants argues the prior art does not disclose resistance to axial movement of the cones relative to the liner hanger body, specifically the prior art requires relative axial movement between the hanger body and cone elements; when the Cochran packer is to be released, the body slides upwardly relative to the cone until snap ring 25 abuts shoulder 24.

The prior art discloses resistance to relative axial movement between the elements in at least one relative direction, when the snap ring 25 abuts the shoulder 24. The claims do not require the elements to be fixed axially.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

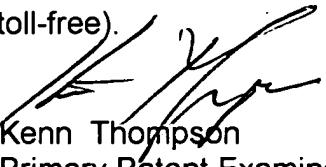
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenn Thompson whose telephone number is 703 306-5760. The examiner can normally be reached on 7:00 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David J Bagnell can be reached on 703 308-2151. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

2 September 2004



Kenn Thompson  
Primary Patent Examiner  
Art Unit 3672